

# THE ROCKEFELLER UNIVERSITY

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Dear Holly:

I have spent much time pondering what response would be appropriate to your query for my thoughts on: the recommendations contained in the Report of the National Panel of Consultants on the Conquest of Cancer, prepared for the Committee on Labor and Public Welfare of the U.S. Senate; and the decision of the President, announced in the State of the Union Message and detailed in the Health Message, to allocate an additional \$100 million in the 1972 budget and later, whatever additional funds can be used effectively, for research on cancer. On an issue as important as this, there is really no middle ground between an exhaustive analysis and a relatively brief summary assertion. Assuming the members of PSAC have had detailed discussions and consultations with knowledgeable government and non-government experts on the substantive and procedural questions involved, I feel confident that I can deal with the problems assertively and that by identifying my position, the logic and data which led me to these assertions will be obvious.

First, I was delighted to see the emergence of what appears to be a national consensus to dedicate ourselves anew to the overriding priority of trying to solve as yet intractable problems of disease. There can be no question that the nation's commitment to finding ways to extend life and enhance health has been diminishing since the mid-1960's, as manifest by relatively stable current dollar budgets, in the face of accelerating inflation and rising costs. Recent actions harbinger the development of new momentum which will allow the country to make up for recent erosion and more fully utilize the talents and ideas of the many able young scientists whose progressive availability paralleled the progressive decrease in the availability of research support.

Second, I was delighted with the tone of the President's Health Message. He clearly demonstrated his perception that the science base in the area of neoplastic disease is far less broad and solid than those on which the space, atomic energy, etc., programs were built. During my tenure as Director, NIH, programs of a highly organized character were put together in the National Cancer Institute. There were tendered increasing support and were encouraged to operate in styles somewhat akin to those employed by the various NASA and the big weapons systems projects. So far, I would have to say that while investments have been sizable, and while the intelligence, energy, dedication and managerial competence supporting them have been of superb quality, the results have been modest. The reason, as you well recognize, is the inadequacy of the science base.

My delight in the prospect for new momentum for biomedical research and at the keen insight of the President into the essential nature of the problem is balanced by uncertainties about the proper, as well as the proposed, levels of funding and by deep concern about Congressional views on the authorities and organizational arrangements for the program.

The President's decision to make available as much money as can be used effectively is wise, at least from my point of view. If there is a reasonable prospect that scientific research can, on the basis of existing leads, soon produce new knowledge with which the incidence of "cancer" can be reduced or patients with the "disease", in all of its protean forms, cured, then an all out effort is warranted and would, in my opinion, meet with the complete approval of the American people. Unfortunately, at present time I am not in an optimal position to assess these opportunities with rigor. I should think, however, that if it has not already been done, PSAC and the Science Advisor to the President would want to review with the utmost care the mechanisms now available for evaluating scientific opportunity, the effectiveness with which they are operating, and the degree to which their impact is felt at the critical decision points. I would also think that PSAC would want periodic reviews of this field to make its own independent assessment of the significance of perceived opportunities, and certainly the Science Advisor to the President will wish to devote a significant fraction of his attention to the problems of cancer research.

Depending on the conclusion of these assessments, some decision should be reached, and reached very soon, on whether the opportunities are worthy of increased public investments to operating levels in the neighborhood of \$1 billion 3-5 years hence, or whether a \$100 million quantum jump to a new orbit, followed by "wait and see" period before further energizing, is the more reasonable course to follow. If the former route is chosen, it implies something close to a 40% increase in the total national biomedical research effort in a very brief span, considering the long lead time for manpower and facilities. In such a situation the initial \$100 million would almost certainly have to be invested in manpower development and facilities construction. In 1968, the NIH projected, from actual 1967 data, a 1970 biomedical research manpower requirement of 64,000 individuals with 75% holding doctoral degrees, in order to sustain a total national biomedical research effort of \$2.6 billion (1967 dollars). [Resources for Medical Research: Biomedical Research Manpower for the Eighties]. While this projection was for all fields, the analysis clearly indicates that manpower will be a critical bottleneck in increasing effort to

\$1 billion, unless an immediate start is made to insure its production. My point is that a commitment to result in an effective program, must be a middle range commitment (perhaps for five years), must cover manpower and facilities as well as support of research, and will require a detailed though broad planning effort.

The several Congressional actions which propose that the new program be mounted under a separate Authority, perhaps reporting directly to the President, and, as a corollary, be operated outside the NIH, is to my mind without merit and dangerously destructive. The NIH is many things, but above all, it symbolizes a set of processes for the governance of the orderly growth and development of science. While the machinery now available may be less than perfect, it is infinitely better than any other ever suggested for the set of problems it must tackle. Through it, biomedical science, at least until the mid-1960's, has grown apace, has been able to offer the overwhelming fraction of creative scientists attractive career opportunities, and has maintained a sound balance between: basic and applied research; research and development; discipline-and disease-category-oriented research; and among the various categories of disease. This has been accomplished by a set of procedures which have more or less successfully orchestrated advice from an enormous number and variety of distinguished non-Federal scientists into a reasonably balanced and coherent program. Conceding the bias that stems from my past identification with this effort, I nevertheless insist that the NIH, in the sense described above, is an invaluable and irreplaceable guarantor to the nation that order, stability, sound judgment, balance, flexibility, responsiveness, and responsibility will characterize the country's assault on the problems of disease, disability, and death.

The inescapable fact is that biomedical science is a complex, interrelated, n-dimensional universe. One can wish it were not, but it is. True, there are within it some large confluences of great density, such as cancer, but even this is inseparable from other large islands such as aging, human development, etc., which in turn relate to atherosclerosis and stroke. To look at any isolated fragment, no matter how large, apart from its innumerable major and minor connections in the vast network of relationships, would be at best naive and at worst self-defeating. This reality animates the processes that the scientific community has institutionalized in the NIH, to view biomedical sciences, to the extent possible, holistically and to thereby assess opportunities not in isolation but in the context of the past state of the art and recent changes in contiguous domains of science.

The creation of an independent Cancer Authority, removing the NCI from the ambit of the NIH, would, in my opinion, not accomplish anything that could not be done within present NIH processes, or trivial and easily realized modifications thereof. On the other hand, it would unleash forces of a divisive character which would quickly destroy the integrity of the NIH. I predict that in a very short time, orderly governance would be replaced by anarchy, and that instead of a judiciously balanced program of biomedical research, program emphasis would be entirely determined by uncritical zealots, by experts in advertising and public relations and by rapacious "empire builders." These latter forces are not to be disdained and they have played an invaluable role in the past quarter century in making the lay public aware that, through research, there was a real possibility of realizing inchoate public hopes and aspirations to control disease. As forces modulating the scientific judgment process, their contributions have been positive and important. As determinants, however,

I would expect them to create chaos.

The vigor behind the "separatist" effort is in no small measure attributable to the desperation and despair that has mounted in the scientific community as other high priority national concerns have apparently forced choices to the detriment of science. Now that the nation seems to have turned the corner and is beginning to repair the damage to the magnificent scientific research apparatus it has built, it would be tragic to destroy one of the most priceless, original and unique institutional forms created for the prosecution of science.

Another factor which might have influenced the consultants who prepared the Report to the Yarborough Committee, had they detected it, is the frustration which occasionally overcomes program people within the NIH. In my years as Director, scientific judgments frequently got lost in, or unnecessarily and improperly diluted by, the bureaucratic machinery at higher levels in the DHEW. Fortunately, on major issues we were usually able to place our case before the Secretary and thereby restore proper perspective. If some way could be devised to facilitate access to the Secretary, DHEW, by the Director, NIH and the Director, NCI, something useful would have been accomplished. A staff Scientific Counselor, or Assistant Secretary position might do this, although the usefulness of the incumbent would depend entirely on his competence and the confidence the Secretary had in his advice. The Office of the Assistant Secretary for Health and Scientific Affairs could accommodate such a position, but more than one layer is probably unnecessary, and the problem of access to the Secretary is, in my experience, the really critical one.

In closing, I would want to reiterate my long held and oft spoken conviction that cancer research must have a broad base in fundamental science. In pursuing its conquest, we must not neglect this infrastructure, supported both by NCI and the other categorical Institutes, and to a lesser extent by the NSF, other Federal agencies and the private sector. And we must not be so distracted with the problem of cancer to neglect opportunities for other "conquests" as they emerge from the whole boiling cauldron of scientific inquiry. Let us hope that cancer is but one of the truly major diseases that beset society which will now receive systematic and adequate attention. But let us hope that this is done with the full appreciation that there are others of much the same socioeconomic importance that the nation will address when once one establishes that the science base is inadequate.

I hope this proves helpful to you. If I may be of further assistance, do not hesitate to call.

Sincerely yours,



James A. Shannon, M.D.